

AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** A recombinant fusion peptabody, which binds to an epidermal growth factor receptor selected from the group consisting of ErbB-1, ErbB-3, and[[/or]] ErbB-4, comprising:
 - a. a cartilage oligomer matrix polypeptide ~~comprising~~ having the amino acid sequence set forth as residues 16 to 64 of SEQ ID NO:2;
 - b. a peptide enhancer sequence having an amino acid sequence selected from the group consisting of YSFE (SEQ ID NO: 5), YSFEDL (SEQ ID NO: 6), and YSFEDLYRR (SEQ ID NO: 9) and located at the N terminus of the peptabody;
 - c. a hinge region of an immunoglobulin polypeptide ~~comprising~~ having the amino acid sequence set forth as residues 65 to 83 of SEQ ID NO:2, located at the C terminus of the cartilage oligomer matrix polypeptide portion; and
 - d. an epidermal growth factor receptor ligand having an amino acid sequence selected from the group consisting of the amino acid sequence of any one of SEQ ID NOs:10-29 and the amino acid sequence set forth as residues 86 to 138 of SEQ ID NO:2, which can bind to the epidermal growth factor receptor, located at the C terminus of the hinge region,
wherein said recombinant fusion peptabody is capable of inducing cellular death in a cell expressing said epidermal growth factor receptor.
- 2-3. (Canceled)
4. (Previously Presented) The recombinant fusion peptabody of claim 1, wherein said recombinant fusion peptabody is multimeric.
- 5-7. (Canceled)
8. (Previously Presented) The recombinant fusion peptabody of claim 1, further comprising a polyhistidine tag sequence.
9. (Previously Presented) The recombinant fusion peptabody of claim 1, further comprising

at least one effector region.

10. (Previously Presented) The recombinant fusion peptabody of claim 9, wherein the effector region comprises a cytotoxin or a detection moiety.
11. (Canceled)
12. (Previously Presented) The recombinant fusion peptabody of claim 10, wherein said detection moiety is fluorescent.
- 13-16. (Canceled)
17. (Previously Presented) A pharmaceutical composition comprising the recombinant fusion peptabody of claim 1, and a pharmaceutically acceptable carrier.
- 18-27. (Canceled)
28. **(Currently Amended)** A kit for treating cancer characterized by expression of an epidermal growth factor receptors selected from the group consisting of ErbB1, ErbB3, and ErbB4, in a human patient, said kit comprising the recombinant fusion peptabody of claim 1 and[[/or]] instructions for administering the recombinant fusion peptabody to the human patient for the treatment of cancer.
29. (Previously Presented) The kit of claim 28, further comprising a separate pharmaceutical dosage form comprising an additional anti-cancer agent selected from the group consisting of a chemotherapeutic agent, an anti-epidermal growth factor receptor antibody, a radioimmunotherapeutic agent, and combinations thereof.
30. (Previously Presented) A kit for diagnosing cancer characterized by expression of an epidermal growth factor receptor selected from the group consisting of ErbB1, ErbB3, and ErbB4, in a human patient, said kit comprising the recombinant fusion peptabody of claim 10, and instructions for use.

31-42. (Canceled)

43. **(Currently Amended)** A recombinant fusion peptabody, which binds to the epidermal growth factor receptor ErbB-1 comprising:

- a. a human cartilage oligomer matrix polypeptide ~~comprising~~ having the amino acid sequence set forth as residues 16 to 64 of SEQ ID NO: 2;
- b. a peptide enhancer sequence for increasing protein production, located at the N terminus of the peptabody and having a sequence selected from the group consisting of YSFE (SEQ ID NO: 5), YSFEDL (SEQ ID NO: 6), and YSFEDLYRR (SEQ ID NO: 9);
- c. a hinge region of an immunoglobulin polypeptide ~~comprising~~ having the amino acid sequence set forth as residues 65 to 83 of SEQ ID NO: 2, located at the C terminus of the cartilage oligomer matrix polypeptide; and
- d. an epidermal growth factor receptor ligand having an amino acid sequence selected from the group consisting of the amino acid sequence of any one of SEQ ID NOs:10-29 and the amino acid sequence set forth as residues 86 to 138 of SEQ ID NO:2, which binds to the epidermal growth factor receptor and is located at the C terminus of the hinge region,

wherein said recombinant fusion peptabody is capable of inducing cellular death in a cell expressing the epidermal growth factor receptor.

44. **(Currently Amended)** A monomer of a peptabody comprising

- a. a cartilage oligomer matrix polypeptide ~~comprising~~ having the amino acid sequence set forth as residues 16 to 64 of SEQ ID NO:2;
- b. an enhancer peptide sequence haying an amino acid sequence selected from the group consisting of YSFE (SEQ ID NO: 5), YSFEDL (SEQ ID NO: 6), and YSFEDLYRR (SEQ ID NO: 9) and located at the N terminus of the peptabody;
- c. a hinge region of an immunoglobulin polypeptide ~~comprising~~ having the amino acid sequence set forth as residues 65 to 83 of SEQ ID NO:2, located at the C terminus of the cartilage oligomer matrix polypeptide portion; and
- d. an epidermal growth factor receptor ligand having an amino acid sequence

selected from the group consisting of the amino acid sequence of any one of SEQ ID NOs:10-29 and the amino acid sequence set forth as residues 86 to 138 of SEQ ID NO:2, located at the C terminus of the hinge region, wherein the epidermal growth factor receptor ligand binds to an epidermal growth factor receptor selected from the group consisting of ErbB-1, ErbB-3 ~~[[or]]~~ and ErbB-4.

45. (Previously Presented) The monomer of claim 44, wherein said monomer forms a multimeric molecule.

46. (Previously Presented) The monomer of claim 45, wherein the multimeric molecule is pentameric or decameric.

47. (Canceled)

48. (Canceled)

49. **(Currently Amended)** An isolated and recombinant fusion peptabody, which binds to an epidermal growth factor receptor selected from the group consisting of ErbB-1, ErbB-3, and ErbB-4, comprising:

- a. human cartilage oligomer matrix polypeptide ~~comprising~~ having the amino acid sequence set forth as residues 16 to 64 of SEQ ID NO:2;
- b. a peptide enhancer sequence having an amino acid sequence selected from the group consisting of YSFE (SEQ ID NO: 5), YSFEDL (SEQ ID NO: 6), and YSFEDLYRR (SEQ ID NO: 9) and located at the N terminus of the portion of the cartilage oligomer matrix polypeptide;
- c. a hinge region ~~comprising~~ having the amino acid sequence set forth as residues 65 to 83 of SEQ ID NO:2, located at the C terminus of the cartilage oligomer matrix polypeptide portion; and
- d. an epidermal growth factor receptor ligand having an amino acid sequence selected from the group consisting of the amino acid sequence of any one of SEQ

ID NOs:10-29 and the amino acid sequence set forth as residues 86 to 138 of SEQ ID NO:2, which binds to the epidermal growth factor receptor and is located at the C terminus of the hinge region, wherein said isolated and recombinant fusion peptabody is capable of inducing cellular death in a cell expressing said epidermal growth factor receptor.

50. (Previously Presented) The recombinant fusion peptabody of claim 43, wherein said recombinant fusion peptabody is multimeric.

51-52. (Canceled)

53. (Previously Presented) The recombinant fusion peptabody of claim 43, further comprising a polyhistidine tag sequence.

54. (Previously Presented) The recombinant fusion peptabody of claim 43, further comprising at least one effector region.

55. (Previously Presented) The recombinant fusion peptabody of claim 54, wherein the effector region comprises a cytotoxin or a detection moiety.

56. **(Currently Amended)** A kit for treating cancer characterized by expression of ErbB1 in a human patient, said kit comprising the recombinant fusion peptabody of claim 43 and[[/or]] instructions for administering the recombinant fusion peptabody to the human patient for the treatment of cancer.

57. (Previously Presented) The kit of claim 56, further comprising a separate pharmaceutical dosage form comprising an additional anti-cancer agent selected from the group consisting of a chemotherapeutic agent, an anti-epidermal growth factor receptor antibody, a radioimmunotherapeutic agent, and combinations thereof.

58. (Previously Presented) A kit for diagnosing cancer characterized by expression of ErbB1 in a human patient, said kit comprising the recombinant fusion peptabody of claim 55,

and instructions for use.

59. **(Currently Amended)** A recombinant fusion peptabody, which binds to the epidermal growth factor receptor ErbB-3 or ErbB4 comprising:

- a. a human cartilage oligomer matrix polypeptide ~~comprising~~ having the amino acid sequence set forth as residues 16 to 64 of SEQ ID NO: 2;
- b. a peptide enhancer sequence for increasing protein production, located at the N terminus of the peptabody and having a sequence selected from the group consisting of YSFE (SEQ ID NO: 5), YSFEDL (SEQ ID NO: 6), and YSFEDLYRR (SEQ ID NO: 9);
- c. a hinge region of an immunoglobulin polypeptide ~~comprising~~ having the amino acid sequence set forth as residues 65 to 83 of SEQ ID NO: 2, located at the C terminus of the cartilage oligomer matrix polypeptide; and
- d. an epidermal growth factor receptor ligand having an amino acid sequence selected from the group consisting of the amino acid sequence of any one of SEQ ID NOs:10-29 and the amino acid sequence set forth as residues 86 to 138 of SEQ ID NO:2, located at the C terminus of the hinge region, wherein said recombinant fusion peptabody is capable of inducing cellular death in a cell expressing the epidermal growth factor receptor.

60. (Previously Presented) The recombinant fusion peptabody of claim 59, wherein said recombinant fusion peptabody is multimeric.

61-62. (Canceled)

63. (Previously Presented) The recombinant fusion peptabody of claim 59, further comprising a polyhistidine tag sequence.

64. (Previously Presented) The recombinant fusion peptabody of claim 59, further comprising at least one effector region.

65. (Previously Presented) The recombinant fusion peptabody of claim 64, wherein the effector region comprises a cytotoxin or a detection moiety.
66. **(Currently Amended)** A kit for treating cancer characterized by expression of ErbB1 in a human patient, said kit comprising the recombinant fusion peptabody of claim 59 and[[/or]] instructions for administering the recombinant fusion peptabody to the human patient for the treatment of cancer.
67. (Previously Presented) The kit of claim 66, further comprising a separate pharmaceutical dosage form comprising an additional anti-cancer agent selected from the group consisting of a chemotherapeutic agent, an anti-epidermal growth factor receptor antibody, a radioimmunotherapeutic agent, and combinations thereof.
68. (Previously Presented) A kit for diagnosing cancer characterized by expression of ErbB1 in a human patient, said kit comprising the recombinant fusion peptabody of claim 65, and instructions for use.
69. **(New)** The recombinant fusion peptabody of claim 1 having the amino acid sequence set forth in SEQ ID NO:2.